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THE GENESEE FARMER.

SATURDAY, JANUARY 5, 1839.

DICTIONARY
OF
TERMS USED IN AGRICULTURE,
AND IN THE SCIENCES MOST INTIMATELY CONNECTED WITH ITS ADVANCEMENT.

[We commence in this number of the Farmer the proposed explanation of Agricultural and Scientific Terms connected with the cultivation of the soil. To what extent the Glossary will extend cannot at present be accurately determined. The explanations will be as much condensed as will be consistent with utility, and the nature of the subject. Where a thing, or a process, has a number of names, the one most generally in use will be selected; and where the information sought is not found under one of the terms in use, it will probably be under another of the synonyms.]

Abrading. This is a term applied by some agricultural writers to the crumbling down of earth from the effects of frost. This process is seen most on fall ploughed lands, and is an efficient agent is ameliorating and rendering fit for cultivation heavy or clay soils.

Abrasion. The wearing away, by running water, of earths, rocks, &c. the banks, or the bottom of streams, and the result of which is the deposit of alluvium.

Absorption. The process by which plants and animals are nourished is called absorption. In most plants this office is performed by the roots, and it is through the vessels called spongioles, with which the roots are terminated, that absorption takes place. In aquatic plants, the water which affords the nourishment is absorbed with facility from every part of their surface. By causing the roots to imbibe colored liquid the general course of the sap may be traced with considerable accuracy.

Acids. Bodies that have usually a sour taste, and corrosive qualities. Some acids appear only in a fluid state, gaseous as carbonic acid, or liquid as sulphuric acid; others are chrystalized as the boraic, benzoic, &c. Of the acids, the only one that has much influence on vegetation is the carbonic.

Acclimating. Plants are endowed with a power of gradually accommodating themselves to the temperature or climate in which they are placed, unless the change is at once so great as to suspend their vital functions altogether. This process is called acclimating. Plants will bear removal better from a warm climate to one of lower temperature, than from a cold to a warm one. As instances in plants, we may mention the potatoe, the bean, the melon, and among fruits the peach and apricot. The cucumber affords an instance of the effect of acclimation. It is grown in the open air at Cairo and at Petersburg; at Carracas and at Quebec.

Aeration. An important change effected on the sap of plants, by the action of light. It consists in the decomposition of carbonic acid gas, which is either brought to the leaves of plants by the sap, or absorbed directly from the atmosphere. The substance of all plants is mostly carbon, and as carbon in its common state, however minutely divided, is never taken up by the sap of plants, this most essential ingredient is obtained in the form of the carbonic gas, from which the oxygen is separated by the caves under the action of light, leaving the carbon ready for assimilation, or conversion into vegetable fibre. That this process is performed by the green substance of the leaves or stem, is evident from the fact that if a leaf is bruised or its vitality destroyed, its substance is no longer capable of decomposing carbonic gas in the light, or absorbing oxygen in the dark. The necessity of this aeration of sap for the purpose of ripening fruit, or maturing vegetation, may be seen in some fruit trees, the plum for instance, in which an excessive quantity of fruit causes a premature fall of the leaves, after which, owing to this loss of the organs of aeration, the fruit never ripens, but remains immature and worthless. The necessity of the leaves for aeration, or perfecting the juices of plants, shows the absurdity of plucking or injuring the leaves of any plant before it is ripe; topping corn, &c., under the idea of hastening maturity, or increasing the product. Attempts to improve on nature must be failures.

After-grass. The grass grown on meadows after they are mown. The usual practice among farmers is to feed this off by cattle or sheep, and in some cases so closely as to nearly destroy the roots of the grass. Unless the turf is close, and the meadow rich, it is better to not feed at all, or very lightly. For cropping after-grass, sheep are better than cattle, since, though their bite may be closer, they do not injure the roots with their feet, like the former. If mown a second time for rowen, it is called—

After-math. On rich meadows, or where manure can be had in abundance, for top dressing, a second mowing may be justifiable, and the grass so cut, if well cured, is much relished and eaten with avidity by ewes, calves, and other animals that are apt to become poor under ordinary management. The practice of the second mowing, however, like after feeding, is not to be recommended on the whole; experience proving that the injury grass roots always receive from mowing, is increased by the second cutting. Necessity alone can render after feeding or mowing justifiable or proper.

Agriculture. In the most extended use of this term, it is made to embrace all the operations made use of to obtain food for man, whether from the field, the orchard, or the garden. In its proper and limited sense, it means the cultivation of the soil, which is the great source of wealth. The first want of man was food; the place to obtain it was the earth; hence the origin of agriculture; and in proportion to his wants, and the ease or the difficulty with which they can be supplied, is his progress in agriculture. Where the wants of man are supplied by the spontaneous productions of the earth, as in parts of Africa, or in the South Sea Islands; or where the inhabitants expect no food from the earth, as among the Esquimaux, or Somoiedes, there agriculture is unknown. It is only where exertion is necessary to procure food from the earth, that wants abound; that wealth is increased; and that agriculture becomes a science, and assumes its proper place as the basis and precursor of civilization, society and order. All history proves that such is the fact. The creation of wealth belongs to agriculture. Food must be had, and the value of every other article depends directly or remotely on the amount of food it will procure. The skill of the mechanic may improve; the enterprise of the merchant may exchange; but the origin belongs to the earth, and the cost and the profit is alike determined by the result of agriculture.

Science has within a few years done much in aid of agriculture; not that many positive discoveries have in the first place been made by the sciences, of which the agriculturist has availed himself; but the cause of certain results before known to the farmer, have been revealed by chemical or other researches, and thus the means of more certainty and in many more cases of producing the same results has been obtained. On this is based the improved system of agriculture. Where the earths are not in due proportion, it is impossible to make or keep the soil in a productive state. The nature of the earths is now inquired into, and their balance maintained by a rotation of crops, or the application of such matters as shall prevent exhaustion, or restore fertility to such as have been improperly treated. The capabilities of the earth in affording food, when properly tilled, is but imperfectly understood. Now and then instances occur in which either by skill or accident these powers are developed to the surprise of all; but what is done in one case may be done in others; and when agriculture is what it should be, when the tillage of the soil, and the application of proper manures shall be better understood, the results that now astonish will become common, and while the labor shall be diminished the product will be vastly increased.

Air. In a state of purity, air consists of nitrogen and oxygen, in the proportion of 76 of the former and 23 of the latter; but as it exists in the atmosphere, it contains about one part in 500 of carbonic gas, and also aqueous vapor in the form of an elastic fluid, the proportion varying from the merest trifle, to 11 grains in a cubic foot. Air acts a most important part in the processes of germination, and subsequent vegetation, not only furnishing the oxygen required to decompose the carbonic gas consumed by the plants, but the most of the gas itself. The water held in the air is also easily parted with, and hence the great advantage of aeration or frequently stirring the earth, to bring its particles in contact with the atmosphere. A square foot of earth in a solid form exposes but a small surface to the action of the air, and hence absorbs from the atmosphere but little; pulverise this mass, and the surface exposed to the action of the air is increased a million fold, and its powers of absorption from the atmosphere in the same proportion. This shows the absurdity of those who refuse in hot or dry weather to stir the earth around plants under the apprehension that it will render them more dry. Multiplying the absorbing surface by stirring the earth is the only way of obtaining the moisture which in greater or less quantities always exists in the atmosphere.

Albumen. A colorless insipid fluid, coagulating at a heat of 120°, existing in the leaves, juices, and fruits of most plants, but most abundant in animal products. The white of eggs is nothing but pure albumen, and the blood contains large quantities of the substance. Its principal use in domestic economy, is in clarifying or cleansing fluids; such as sugars, &c. for which purpose it is unrivalled. Milk contains albumen, and hence is sometimes used for cleansing syrup, but it is inferior to the whites of eggs. These, carefully incorporated with a fluid when cold, and then submitted to a coagulating heat, will lift all impurieties to the surface, where they can be easily taken off by skimming. Albumen is more abundant in the bark of the red or slippery elm, than in any other vegetable product, hence its value for medicinal purposes. Albumen is composed of carbon 52, oxygen 23, hydrogen 7, and nitrogen 15.

Alburnum. Wood of trees is usually composed of three distinct parts; the pith or central part, having a loose spongy texture; the heart-wood, the most durable and valuable part of the tree; and the sap wood or alburnum. This last is usually whiter than the heart-wood, is more porous, and through it the circulation of the sap is principally performed. It is the soonest attacked by the borer or powder post, and in exposed situations is always first to decay.

Alcohol. The purely spiritous part of all liquors. It is the product of vinous fermentation, and can be derived from all substances capable of such fermentation. It is the intoxicating principle of liquors, and few nations have been found so rude as not to have found some means of producing it. Alcohol is produced principally by the distillation of wine, molasses, and grain. The product of the first is brandy, the second rum, and the third whiskey or gin. Alcohol is of much use in the arts,

but it has, by its general use, produced a most unhappy effect on the happiness and morals of multitudes. Perhaps greater quantities of distilled spirits are used by the nations that border on the Baltic than in any other part of the world, and here they are principally produced from the distillation of potatoes. Pure alcohol consists of hydrogen 13,70; carbon 51.98; and oxygen 34.32.

ALGAE. One of the families of plants into which Linnæus divided the vegetable kingdom. They are defined to be plants of which the roots, leaves and stem, are all one. The remains of algae are abundant in a fossil state in the shale of many parts of New York, and their decomposition may have contributed to the fertility of the strata in which they exist.

ALKALI. A substance usually extracted from plants; and distinguished by the following properties: It has an acrid and corrosive taste and power; it changes vegetable blue to a green, red to a purple, yellow to a red brown, and purple reduced by an acid to its original color. It is most used in the arts for neutralising acids. It is the best known in the shape of potash and soda. These unite with oils and animal fat, and form soap. Lime is possessed of alkaline properties, which gives it its principal value in many cases. Alkaline substances have been divided into volatile and fixed; the volatile being known as ammonia, the fixed as potash or soda. Modern chemists have divided them into 3 classes: 1. those with a metallic base combined with oxygen, potash, soda and lithia; 2. that which contains no oxygen as ammonia; and 3. those containing oxygen, hydrogen and carbon, as aconita, circuta, morphia, &c.

ALLUVION. Land deposited by the action of rivers; either at the mouths in lakes or the sea, or on the banks in their passages to these receptacles. Constituted as it usually must be of the richer and lighter parts of the regions drained by the river that deposites it, it is the most fertile of soils, and the most valuable, when it can be drained, or rendered secure from floods. Nearly the whole of Holland is alluvial. In this country the vast tract on both sides of the Mississippi, for a great distance from its mouth, is of this character; but owing to its annual submersion is of comparatively little value. Perhaps there is no river in the United States in proportion to its length and volume, that has so much valuable alluvion on its borders as the Genesee.

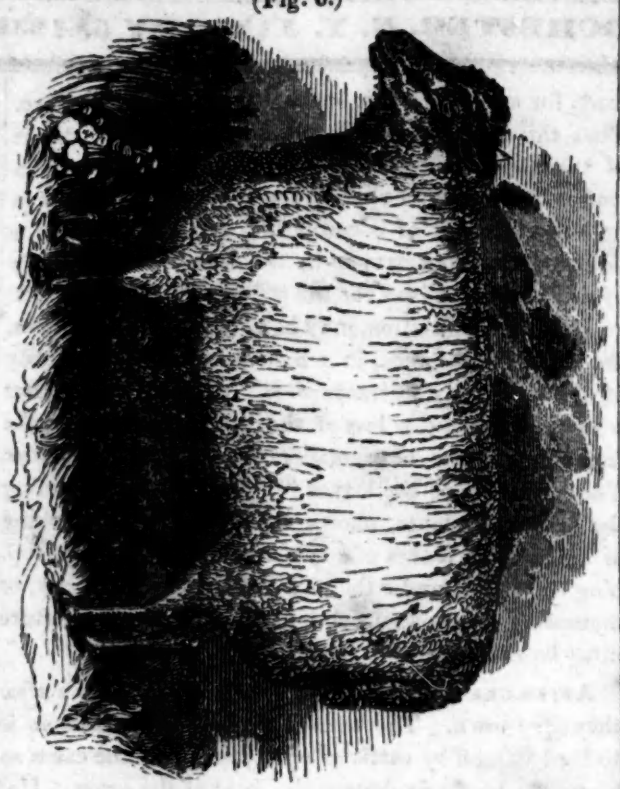
ALUMINE. One of the earths most important to the agriculturist, and entering largely into the composition of all rocks, clays, and loams. It was formerly termed *argil*, or argillaceous earth, but Sir H. Davy's discoveries led to the belief that it was a metallic base combined with oxygen. It is found nearly pure in the Corundum; porcelain clays and kavlin contain about one-half of this earth, and it may be obtained pure from the alum of commerce, by chemical processes. Alumine is the principle that gives the peculiar tenacity and plastic nature to clays; rendering them heavy and impervious to water, in proportion to the quantity confiined in them. Alumine has a great affinity for water, hence clay lands are usually more cold and wet, and more difficult to cultivate than those into which it enters in less proportions. Its presence in soils is, however, absolutely necessary to prevent porosity; and when combined in due proportion with the other principal earths, it constitutes one of the surest ingredients of a fertile soil. Much attention has of late been paid to the amelioration of clay soils, and of all the methods tried, thorough draining has proved the easiest and most effective. When clay land is drained, its texture is changed; and the plants it naturally produces, as well as those it is made capable of producing, are of a higher and more valuable kind. Alumine is of much use in the arts; it is extensively employed as a cleansing powder; as a mordant in dying; and is the basis of bricks, crucibles and porcelain.

According to a paragraph in the St. Louis Bulletin, a Copper mine of great value has been discovered on the Currant River in Missouri.

☞ Large quantities of ice was again floating in the Mississippi on the 7th inst.

SHEEP--Leicester and South Down.

(Fig. 6.)



In former volumes of the Farmer we have given engravings of the Merino and Saxon varieties of the sheep; and in this and the next No. we shall present our readers with specimens of the Leicester and South Down kinds, copied from the great work on Sheep published by the London Society for the Diffusion of Useful Knowledge. We have selected these improved varieties, as they are at the present time deservedly exciting considerable interest among sheep growers in this country, and promise, by crossing with the Merino, to give the common farmer a race of animals yielding more wool than the Saxon or Merino, sufficiently fine for ordinary domestic purposes, and yet more hardy, and requiring less attention than the fine wooled sheep in demand in our climate. Neither the Bakewell or the South Down, can ever supercede the Saxon or the Merino for wool required for the finer fabrics, and if crosses with these are found better for the common farmer, the fine wool grower need not fear that the proceeds of his flocks will ever cease to be in demand. We may here remark in passing that the manufacturers of this country do not make the difference in prices between the full blood and grade wools that they should do to encourage its growth, or as we imagine the difference in the price of fine and ordinary cloths would warrant; certainly not as much as is made in France and England, where the qualities and relative value of the article must be understood, at least as well as here. For examples of the relative proportion which the Merino, South Down and Leicester bear to each other, as seen through a microscope, the reader is referred to vol. 3, page 135 of this paper. Repeated examinations of wool from healthy sheep, and of good quality, show the fineness of several varieties to be as follows in parts of 1000.

Saxon	840	South Down	660
Merino	750	Leicester	500

The principal recommendations of the Leicester breed, according to Culley on Live Stock, are "the beauty and fullness of form, comprising in the same dimensions, greater weight than any other sheep; an early maturity, and a disposition to fatten, equalled by no other breed; a diminution in the proportion of offal, and the return of the most money for the food consumed."

"As a lowland sheep, and destined to live on good pasture," says Mr. Youatt, "the New Leicester is without a rival—in fact, he has improved, if he has not given the principal value to, all the other long wooled sheep." The same accurate observer gives the following as the characteristic of a true Leicester—a sheep that has precisely the form for an animal requiring plenty of good pasture, without any great distance to travel, or exertion to make in gathering it:—

"The head should be hornless, long, small, tapering towards the muzzle, and projecting horizontally forwards. The eyes prominent, but with a quiet expression. The ears thin, rather long, and directed backwards. The neck full and broad at its base, where it proceeds from the chest, but gradually tapering towards the head, and being particularly fine at the junction with the head; the neck seeming to project straight from the chest, so that there is with the slightest possible deviation, one continued horizontal line from the rump to the poll. The breast broad and full; the shoulders also broad and round, and no uneven or angular formation where the shoulders join either the neck or the back, particularly no rising of the withers, or hollow behind the situation of these bones. The arm fleshy through its whole extent, and even down to the knee. The bones of the legs small, standing wide apart, no looseness of skin about them, and comparatively bare of wool. The chest and barrel at once deep and round; the ribs forming a considerable arch from the spine, so as in some cases, especially when the animal is in good condition, to make the apparent width of the chest even greater than its depth. The barrel well ribbed home; no irregularity of line on the back or the belly, but on the sides the carcass very gradually diminishing towards the rump. The quarters long and full, and as with the forelegs, the muscles extending down to the hock; the thighs also wide and full. The legs of a moderate length, the pelt also moderately thin, but soft and elastic, and covered with a good quantity of white wool, not so long as in some breeds, but considerably finer."

This description will be recognized at once as just by any one who has had an opportunity of examining the many beautiful sheep of that breed that have within a few years been introduced into the United States. They mark an animal calculated to attain great weight, with the flesh where it will be of the most value, and if, as some of his rivals asserted, Mr. Bakewell sacrificed the wool to the carcass, he certainly brought the last to the highest state of perfection. This is evident from the many premiums the improved Leicesters have received in England, where more attention is given to weight of carcass than it has as yet received in this country. The object of Mr. Culley's improvements was to do away the objection raised to the coarseness of the Leicester wool, as left by Mr. Bakewell, while the size and tendency to fatten should be retained, and he has in a measure succeeded, though still not so far as to produce wool fit for the finest fabrics.

The engraving represents a ram owned by the Duke of Bedford, and much resembles some of the best that have been imported into this country, as well as those delineated in the pages of the Farmers' Magazine.

One of the earliest and most successful growers of the Leicester or Bakewell Sheep in this country, is Mr. Dunn of Albany. He has at present, however, but few pure Leicesters, having given his flock a cross of the Cotswold, as he thinks to the improvement of the fleece and the constitution. According to a statement in the Cultivator of last year, Mr. Dunn's yearling rams produced wool as follows:

2 yearlings.....22 lbs.
4...."....42 "
4...."....36½ "

averaging 10 pounds each. Mr. Wilkinson, of Duanesburgh, has a flock of Leicesters which averaged on the whole six pounds per head.

In a letter now before us from Mr. Cowlen, of Truxton, Cortland county, who has imported some very superior Leicesters, (and we are pleased to learn intends early in the coming season to import some Short Horn Durhams, Leicester and South Down Sheep, Berkshire Pigs, &c., the animals to be selected by himself,) from one of which, a yearling buck, he sheared 10¾ lbs. of clean wool, and from 20 ewes, 145½ lbs. of clean wool, averaging about 7¼ lbs. per head. Ten yearling bucks gave him 97 lbs. of wool. These yields we consider extraordinary, when the privations of a ten weeks voyage across the Atlantic are remembered, and the effect which such keeping and changes must have on the fleece is taken into view. Mr. Cowlen has a Leicester buck weighing upwards of 300 lbs.

A number of gentlemen in several parts of this district of New York, have commenced fine flocks of Leicesters from imported Sheep, among which we may mention Mr. Cowlen, of Cortland Co., Mr. Weddle, of

Ontario Co.. Mr. Williams, of Onondaga Co., and they are rapidly spreading by sale and by crosses among our farmers. At the Skaneateles Fair, a number of sheep and lambs of a cross from the Bakewell with the South Down, were much admired, appearing to combine in a great degree the size and weight of the one, with the good qualities of the wool in the other. A lamb of this cross, six months old, weighed 136 lbs.

Electric Agency.

Many have of late supposed that electric causes had much influence in the production of disease in plants and trees, and that fatal disease, the fire blight in pear trees, has been attributed to this cause. Mr. Crosse, the well known English experimentalist, whose recent discovery of the efficiency of the electro-magnetic agency in the production of insects has excited such a sensation in the philosophical world, has a most valuable paper in the last number of Prof. Silliman's Journal, detailing his experiments and their results at large. To the disgrace of the age, it appears that the making and engaging in such experiments has been charged upon Mr. C. as a crime, and he has been called 'Athiest' and 'Materialist,' as though the discovery of new philosophical truths must of necessity render a man irreligious. Mr. C. has replied in a way that must shame his accusers, and add to the respect which is felt for him as a votary of science. In the latter part of the article Mr. C. says—

"I have made so many experiments on electrical crystalization, that I am firmly convinced in my own mind, that electric attraction is the cause of the formation of every crystal, whether it be applied artificially or not. I am, however, well aware of the difficulty of getting at the truth in these matters, and of separating cause from effect. It has often occurred to me, how it is that such numbers of animalcules are produced in flour and water, in pepper and water? also, the insects that infest fruit trees after a blight? Does not a chemical change take place in the water, and also in the sap of the tree *previous* to the appearance of these insects, and is, or is not, every chemical change produced by electric agency? In making these observations I seek to mislead no one. The book of nature is opened wide to our view by the Almighty Power, and we must endeavor, as far as our feeble faculties will permit, to make a good use of it; always remembering, that however the timid may shrink from investigation, the more completely the secrets of nature are laid bare, the more effectually will the power of that Great Being be manifested, who seems to have ordained that

"Order is Heaven's first law."

ITEMS IN DOMESTIC ECONOMY.

To preserve *fresh meat*, killed early in winter, through cold weather, bury it in snow—the best way is to place alternate layers of meat and snow in a tub or barrel, and keep it in a cool place. The meat should be a little frozen first. Several days warm weather will not effect it; and if kept in an ice house, it may be not only preserved through winter, but during the following spring.

Hams cannot be kept with ease or certainty unless the flat bone near the center of the inner side which joins on the other bones of the ham by a ball and socket, be first carefully removed. Where this has been neglected, although every other care has been taken, failures and loss has followed.

The best way to keep winter apples, is to barrel them. This perfectly excludes rats and mice, and preserves them in a great measure from the air.

Where corn is to be fed out to cattle and other domestic animals, it is much best where practicable, to grind it with the cob.

Oats are more beneficial to horses if ground; and hay, if chopped fine.

Dry wood will produce on a moderate estimate, twice as much heat as the same amount of green wood; and saves much trouble in kindling fires on cold mornings. To prevent its burning away too rapidly, the sticks should be large. To suppose that green wood will actually cause more heat in burning than dry, is as absurd as to suppose a vessel of hot water will freeze sooner than a cold one.

To remove ice from door steps, throw on salt; it will cause the ice to crack and become loose, when it may be easily removed.

Salt should be regularly fed to cattle both in winter and summer. They will never eat too much if it is placed constantly before them where they can obtain it at all times. The best way to feed them with it, except when snow is on the ground, is to employ *salt troughs* for the pupose, which are made most convenient by making a deep cavity in the convex side of a short thick piece of slab, or a chip from scoring timber, to be kept filled with salt. These are to be placed flat upon the ground. They are very cheap and will not easily upset. In winter, when the ground is covered with snow, salt should be applied by brining the fodder.

Use spirits of turpentine to remove grease spots from clothes. It dissolves the grease and then soap the more easily removes it. Grease may be removed from undyed woolen by a solution of pearl ash.

Lime spots on woolen clothes may be completely removed by strong vinegar. The vinegar effectually neutralizes the lime, but does not generally effect the color of the cloth. Dark cloth, the color of which has been completely destroyed in spots six inches square, has thus had its original color perfectly restored.

The whiteness of ivory handle knives may be restored by rubbing them with fine sand paper or emery.

The oftener carpets are shaken, the longer they last, as the particles of dirt and sand which collect upon them grind the threads. Sweeping them also wears them.

J. J. T.

Rise and Fall of the Lakes.

A pamphlet of some thirty pages, principally devoted to this subject, has been published by *Edward Giddins* of Lockport. From a hasty glance at its contents we are inclined to think it well worth the attention of all who feel interested in a subject so fruitful of remark as have been the fluctuation of the Lakes. Mr. G. is evidently a man of talent and observation, and one who has bestowed much attention on the subjects of which he treats. To the question, "What causes the rise and fall of the Lakes?" he submits the following brief answer:

What, then, it may be asked, is the cause of the Lake fluctuations? I answer, no one exclusively. The evaporation, humidity, weight, temperature, and commotion of the atmosphere, may all in justice claim a share in their production. But their combined influence, even were it possible for them to act in concert, would not, as has, I presume, been satisfactorily shown, account for the yearly floods of the lakes. They, however, never act in concert,—but, ever varying and ever more or less opposing or counteracting each others movements, their combined effects must ever be irregular, inconsiderable, and frequently evanescent. There must, therefore, be some predominant cause, comparatively regular in its operations, and altogether more powerful than the combined influence of others, to produce the yearly lake floods. What is it? SNOW.

The yearly rise of the lake will ever be found to bear an approximate ratio to the average quantity of snow throughout its extensive valley. I do not say an exact ratio, because there are many disturbing causes which have more or less influence, according to the amount of coincidence or opposition of their action. The time occupied in the conversion of the snow to water, is an important element in the calculation of its effects. The more sudden the more effective. The manner of its conversion is also worthy of notice. Whether it be by heat, by rain, or by both combined. Whether it take place simultaneously through a greater or less extent of the lake valley, &c. &c. It is probable that the average depth of snow throughout the whole 300,000 miles of the lake valley, is sometimes not less than twenty-four inches, at the commencement of its conversion into water at the breaking up of winter; this, in its solid settled state, is equivalent to about four inches of water throughout this whole vast extent. Were it possible to deposite the whole at the same time in Lake Ontario, it would raise its surface not less than thirteen or fourteen feet. Should the time of conversion be protracted to one, two, or three months, accompanied with rains sufficient to supply the outlet, the effect would not be diminished.—The average amount of snow in the lake valley, varies in different winters between very wide extremes; and the yearly rise of water, due allowance being made for the disturbing causes above named, will be found to vary accordingly. If this theory be correct, the upper lakes will soonest exhibit the effect of spring thaws and summer droughts; because their valleys being comparatively small, require less time to spread the effects of change throughout. Lake Ontario, whose valley embraces those of all the other lakes in the chain, will be latest in exhibiting either. And so it is in fact.

EXHAUSTION OF SOIL.

If we can ascertain with certainty the comparative drain or exhaustion of the soil, caused by the growth of the different crops we cultivate, we shall advance one step in the progress to determine which are most profitable for cultivation.

It is an old maxim that flax and hemp are first in the rank of plants that impoverish the soil.

They are both culmiferous or stalky, having but little leaf through which they may imbibe nutriment from the atmosphere. They also produce abundance of seed, which is suffered to ripen before harvesting; and lastly, root and branch are plucked up at the gathering of the harvest, leaving nothing in the soil or on its surface to be decomposed and converted into manure in the following season.

If we add to these causes of impoverishment the fact, that no animals are fed from these crops, and that consequently no means are provided for restoring lands thus planted to their original fertility, we shall come to the conclusion that flax or hemp farms should have abundance of inherent riches to sustain, for any length of time, such wasting crops.

Farmers are not much in the habit of reasoning on this subject. In talking upon it they are often led by fancy, and imagine one plant to be more detrimental than another without a reason, and without a critical experiment. Hence we hear multitudes of cultivators declare that the potato enriches the soil, and that Indian corn is a great exhauster.

Are these opinions correct? It is a fact that corn may be raised for a long series of years on the same plat, and that no more manure is required on the tenth planting than on the fifth. The stalk also continues as bright in the latter years as at first, and grass or grain of any kind flourishes as a succeeding crop.

Is this the case with potatoes? Certainly not. They are much more liable to rust on a second planting of the corn field, and in Britain many fields that have borne potatoes for a succession of years are found to produce a very diminutive harvest. It is understood that large districts there have abandoned the plant and substituted the turnep.

If our theory be correct the potato should be classed with the most impoverishing plants. At harvest its very roots are pulled from the earth and root and branch are suffered to lie till they have lost all their sweetness, if they ever possessed any, and little is harvested to be returned again to the soil in the shape of manure.

We would not dissuade our farmers from the raising of potatoes. They have become a necessary of life, and we must raise them for the table; but for stock they cannot be a profitable production on our light sandy loams. We can raise three or four bushels of the ruta baga or yellow turnep, with less expense than one bushel of potatoes—and turneps injure such soils much less than these. Turneps want a rich *surface*, and they leave the ground rich. Their wide expanded leaves imbibe copiously the richness afloat in the surrounding atmosphere, and by sheltering the surface of the earth, it is believed they promote the accumulation of nitre beneath their shade, and thus prepare the earth for a future crop. We cannot keep our neat stock or our pigs wholly on grain, but we may fatten either with a very small proportion of it. When boiled, and mixed with meal, the yellow turnep makes a rich repast, and affords as much nourishment as the potato, and neat stock will eat them as readily uncooked as they will eat the potato.

The above is not mere theory. Actual experiments convince me of the correctness of the principles here stated, and we know that even Indian corn, which is allowed to be a great exhauster, does not impoverish our light soils so much as the potato, and that with the same manuring for each, we get a better harvest of hay after corn, than after these expensive roots.—*Boston Courier.*

INDIAN WHEAT.

A. W. Stockbridge of Byron, Me., raised last summer from two quarts of Indian Wheat, seven bushels and two quarts. After it was mowed and nearly dry, there came a storm of rain, and wasted probably half a bushel or more of it.

The writer who communicated t is to the editor of the Maine Farmer says—"This is more than a common yield. It was sowed upon one eighth of an acre, the soil dry and sandy, but it received a pretty good dressing of manure. It was sowed about the middle of June, and harvested near the middle of September. This is the *moderate yield* of one hundred and thirteen bushels from one, thus bringing forth, even in this country, 'some an hundred fold.' We find it good to fatten hogs, and it also makes very good warm bread."

COMMUNICATIONS.

NOTES ON WESTERN NEW YORK---No. 7.

WHEAT.

The statements made in my last paper on the agricultural products of the western district, and their relative value, make it, I imagine, clearly appear that wheat is entitled to the first place in their consideration. Independent of its importance as an article of food to the inhabitants, wheat constitutes the great source of wealth, and as an article of export, gives the districts in which it is principally grown, very considerable advantages at present, over those in which its cultivation is attended with more difficulty. Of the ten millions of bushels of wheat I have supposed grown in the western district, three-fourths of the whole quantity grown, is produced on the northern half of the district; and with the exception of the past season, in which large quantities of spring wheat have been produced on the southern slope, the proportion belonging to the northern half would have been still greater, reaching in some years to four-fifths. In this division of the district, the line would not follow that of the greatest elevation, but commencing at the northern extremity of the Cazenovia lake, passing through the Otisco, Skaneateles, and Owasco lakes, dividing the Cayuga and Seneca in the middle nearly; passing the northern extremity of Crooked lake, and thence through the Canandaigua and the chain of lakes west to Mount Morris, Middlebury, and thence a little south of Batavia to Buffalo. I do not intend to intimate that much excellent wheat land is not found south of this line; particularly in the vicinity of the Cayuga and Seneca lakes; yet no one acquainted with the country will deny that the soils north of this line are more favorable for grain, than those to the south.

Since the cultivation of wheat has become so much of an object in this district, the modes of preparing the soil for its reception have been very different; in some cases, the farmer, appearing anxious only to make the most money from his land without any regard to the wearing of the soil, or after consequences, while others have cultivated their lands in a more skillful way, and if not realizing so much immediate profit, they have the satisfaction of finding their farms improving, while the deterioration of others proves that they have killed the goose that has laid the golden egg. In the best wheat districts, clover and wheat have been made to alternate, plaster being used on the clover and sometimes on the wheat, and the clover after a growth of two years ploughed under, furnishes a dressing for the soil, which with the manure occasionally applied, keeps the land in good heart, and prevents a falling off in the crops.

I have before stated that the best wheat lands are to be found on the limestone zone, or the calcareous or sandstone shales that intermix between the mountain limestone and the lake. This agrees with the theory and experiments of Chaptal, Davy, and those that have been made in this country. The former, in analyzing some excellent wheat soils, found them to average as follows,—silica 56, alumina 14, and carbonate of lime 30. Davy, in a superior wheat soil, found carbonate of lime 28, silica 32, alumina 39. Tillet of Paris made a great number of experiments by mixing these three earths in different proportions and adding the same quantity and kind of manure to each, thus forming an artificial soil, and the mixture most productive was composed of silica 46, alumina 16, and carbonate of lime 37. I know of no instance of analysis of wheat soils in this country in which the proportion of lime was as great as these; and the artificial soil of Tillet it is clear must have approximated to a rich marl.

Experience is conclusive that the clover rotation succeeds best on the soils that contain the most lime; and in the production of wheat after clover, the dry and calcareous earth of the limestone zone is justly considered pre-eminent. "A good wheat soil must be dry, it must contain a considerable portion of finely divided clay, a considerable portion of finely divided lime, and must possess a good depth of soil."* The traveler in Western New York, who pays attention to the soil, will find abundant evidence of the truth these remarks. Wheat grown on a wet soil, is much more liable to diseases from blight and mildew than if grown on a dry one; and the varying qualities of wheat in the same field not unfrequently attest that such is the case. The limestone zone from the nature of its substance is naturally dry; the cracks and fissures take off the superfluous water to issue in springs below, generally leaving a soil of sufficient depth, and favorable to vegetation from the nature of the materials composing it.

One of the best soils I noticed for wheat, is found a few miles north-west of Batavia, called there the Oak Openings. It is on the limestone, south of the ridge, is composed of silica, gravel and sand, with a large quantity of carbonate of lime, and a sufficient quantity of clay to prevent porosity, or the injurious effects of drouth. From its position also, in common with most of the land lying on, but south of the outcrop of the lime rock, it contains a large proportion of vegetable mould, or the humus of Bergmann, and the immense quantities of good wheat grown on such sections, justifies the predilection of farmers for such soils. In those divisions of the state, I found the whole country almost, literally speaking, in wheat; the thickest stubble of lately reaped fields showing above the clover with which they were seeded; and the broad level fields, some containing a hundred acres each, newly sown, and just showing the green springing wheat, testifying to the principal, or indeed only, object of the husbandman. The same remarks will apply more or less to the whole of the limestone zone, with the sections most closely connected with it to the north and south. In no part of the country can such mountains of straw be seen in the fields, or around the barns of the farmer, as in the one to which I have alluded; and judging from appearances, it has rather been deemed an incumbrance than otherwise, for, except in a few instances, little appears to have been done to render it available as a manure. In some cases where wheat after wheat had been taken from farms the deterioration was clearly manifest, the crops having receded from an average product of 30 or 35 bushels an acre to not more than 20, or in many instances even below this.

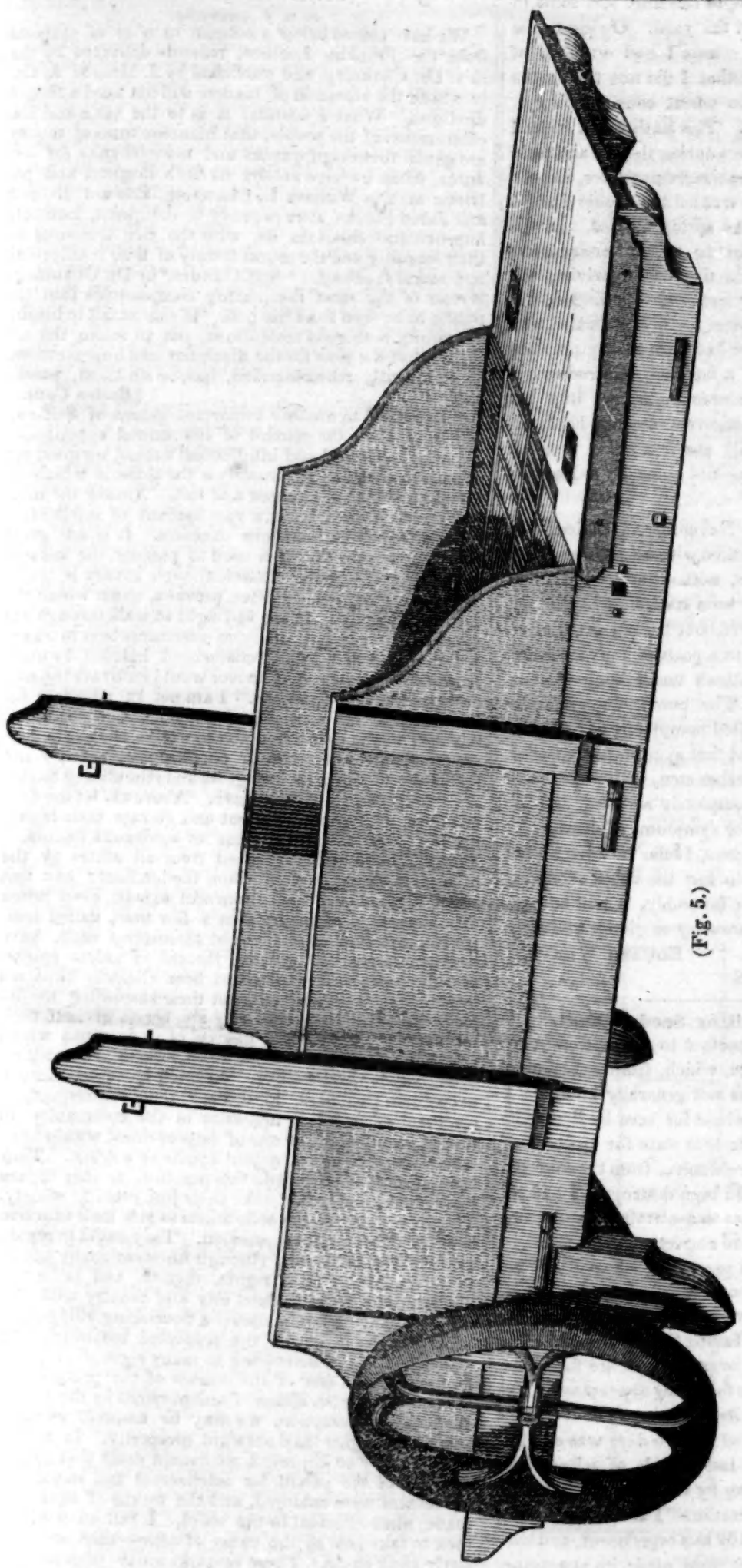
In some parts of the western district where good winter wheat is grown, but not in such quantities as in the zone last mentioned, a course of cropping more artificial has been adopted, which is found not only better adapted to continuing or even increasing the fertility of the soil, but to render the crop of wheat much more certain. This is by lengthning the term of rotation, and giving manure to the crop preceding the wheat, which is generally corn or roots, the first now being far the most usual. In this case the rotation is corn well manured, wheat with clover, or the whea its followed with some spring grain with which the grass seeds are sown, and these produce pasture or meadow as is wanted for two or three years, when the turf is turned over, and corn, heavily manured, or roots, succeed as before. In this way wheat succeeds well without a summer fallow, the manure is applied to the crops that require it the most, and the succession is such as to ensure the continued fertility of the earth. Some good farmers assured me that they considered wheat after corn, when prepared in this way, their surest crop, and far preferable to a summer fallow where the manure was applied directly to the wheat, as in the latter case the growth was apt to be too rank, so much so as not to fill well. Common barnyard or stable manure, is of course the manure alluded to by them.

The time of sowing winter wheat is from the last of August to the last of October; the proper period is the middle of September. This time is preferred by the best farmers, as the hot dry weather has usually passed, and there will be sufficient time for the wheat plant to obtain a firm root before winter. If sown too late the fibres of the plant root are weak and easily drawn out or broken off by the frost; and if sown too early, or when the ground is very hot and dry for a long time after sowing, the seed or the young shoot perishes. This was somewhat extensively the case last summer. I saw large fields of wheat sown in August, the young shoots of which perished in the drouth, and the ground had to be re-sown. The method of putting in the seed varies much with different farmers, but the usual practice is to harrow it in. I have never known an instance of drilled wheat in West New York; though experience abroad would seem to indicate that it might be adopted in all places where the fields are sufficiently free from stumps and stones to admit the practice, with advantage. I think our farmers fail in putting their seed in deep enough. Too deep sowing is manifestly injurious to the plant, should it grow; but three inches of good mould will prove no obstruction to the germination of the seed, and a plant at that depth is much less likely to have the roots affected by frost, (the great enemy of the wheat grower) than when it germinates barely beneath the surface. Some farmers plough in their wheat with a shallow furrow, and this is believed to cover the seed better than the harrowing alone. I have seen in some cases a method adopted which approximated to drilling, and I was told, with excellent effect. The ground is first prepared and made fine in the usual manner. It is then thrown into furrows of some four or five inches deep, and at a distance of from eight to ten inches; or as near as a narrow light plough can make them. The seed is then sown, and as a necessary consequence, the most of it as it falls rolls to the bottom of the furrows. A light fine harrow is then passed crosswise of the ridges and the seed is covered. When it shoots, the field appears very much as though the drill had been used. It is not to be disguised, however, that even in the best grain growing districts much of the ground is very imperfectly prepared for the crop, and the seed got in in a most slovenly manner. If some farmers who count up their 50 or 100 acres of wheat sown, would make an estimate of the land lost by the loose stones, or the half decomposed clods that disfigure the surface, and preclude the growth of the wheat, they would find the acres sadly diminished, and their crop usually shows that such is the fact.

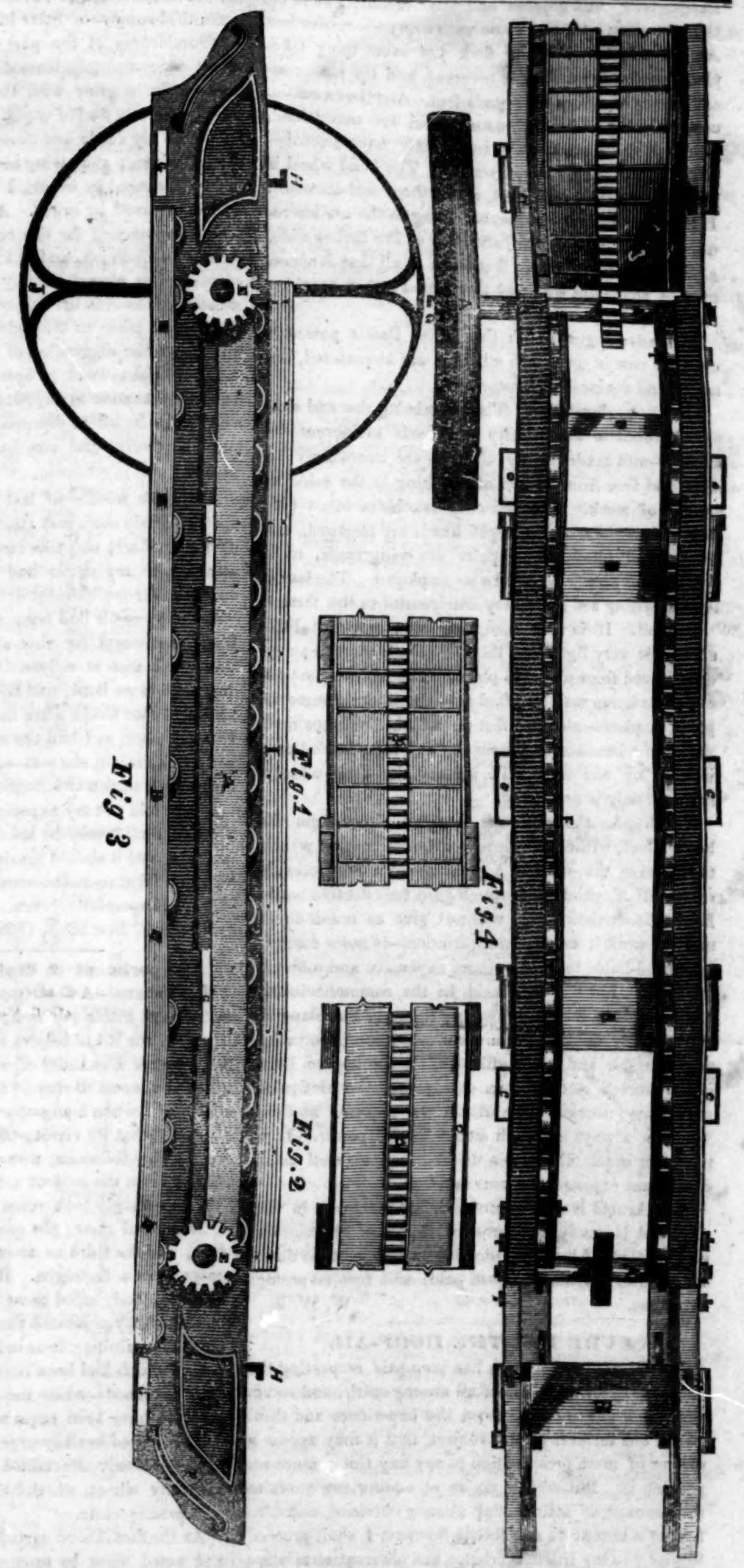
The kinds of wheat sown in Western New York are very various, almost every kind having its warm advocates and eulogists. 'Corn quackery,' as the unduly extolling new varieties of grain is called in England, is, it is to be feared, not altogether unknown here. Of winter grain we have the red and white bald, the red and white bearded, and of these many varieties, known by distinct names, such as Flint, Michigan, Poland, &c. &c. Of spring wheats we have the common wheat, Tea, Black sea, Italian, Siberian, and many other kinds, which the increased cultivation of spring wheat has called into notice. Among these new varieties, I have noticed one or two derived from choice kinds of winter wheat, and which may possibly prove an acquisition to the wheat grower. Of all these kinds there is none that appears to be received with such general favor, both by grower and manufacturer, as the White Flint. I believe no one pretends that in ordinary cases this wheat will produce as large a yield as the red chaff white wheat, when that wheat does well, but the chances of a good crop are greater with the flint wheat, owing, I am told, to its being a hardier plant, and less liable to suffer from the rust or blight while growing. Besides no wheat has yet been found that equals it in the quantity or quality of flour it makes per bushel, owing to the plumpness of the berry and the thinness of the skin. In examining some twelve or fourteen varieties with the microscope, by submitiing cross sections of the kernels to observation, the superiority of the flint wheat in the latter respect was very apparent. Whether it will long retain this eminence, or whether some new, or improved variety will supplant it, remains to be seen. That new varieties of wheat may be originated by crosses, or by selection, cannot be reasonably doubted; and where that crop forms such an important staple as it does in New York, I think efforts of this kind should be attempted, since if successful they would be of incalculable advantage.

VIATOR.

* Rookes' Geology applied to Agriculture.



(Fig. 5.)



Arnold's Improved Portable Horse Power.

The annexed drawings represent Mr. ARNOLD'S improved machine for the application of horse power; and it is difficult to conceive that any further *improvement* for such purpose is possible. It seems to be the whole desideratum.

Fig. 5 represents the entire machine for one horse, ready (with the exception of a band for the band wheel,) to be applied to a thrasher, circular saw, lathe, &c.

Fig. 4 is the frame, with the sides which enclose the horse and the flooring, (except one piece at one end) taken off; showing the sides and the upper set of rollers on which the flooring moves; also, the two shafts with their pinion wheels.

Fig. 3 gives an inside view of one side, showing both sets of rollers, upper and lower, on which the upper and lower portions of the floor move; together with the guides G. F. at the ends; also the pinion wheels E. and the band wheel J.

Figs. 1 and 2 represent a portion of the floor; fig. 1 the upper side; fig. 2 the under side of the same, which rests upon the rollers.

The flooring on which the horse stands, is composed of ten cast-iron plates (figs. 1 & 2) each two feet long and one foot wide, with flanges or projections on each corner, and rounds B, fig. 1, of equal size and space between, through the middle, lengthwise, which work in the cogs of the pinion wheels. These plates, when placed in the machine, form a continuous double floor, —four lying upon the upper rollers, on which the horse stands, and four on the lower set of rollers, and one at each end. They have several ribs on the upper surface, to give the horse better foothold. When pushed by his feet, in the act of pulling, they give a rapid motion to the pinion wheels E, fig. 3, which are but six inches diameter. At the lower end, the guides G. F. receive, support and guide the outer end of the plate, while the pinion wheel keeps its hold of the other end of the plate by its *end-round*, and depresses it to the lower set of rollers, and then drives it forward by the cogs on the under side; in the mean time, the cogs on the upper side drive the next and last upper plate, on to the

flanges G. F. and depress and drive it under, as it did the preceding one; and so on with every successive one. At the other end of the floor the same thing takes place, except the motion is reversed, and the plate rises and moves on under the horse's feet. And thus a continuous flooring and continuous motion are maintained, although the several parts are wholly unconnected—are without links, bolts or screws. The band wheel is attached to the upper shaft, and is three feet diameter. It may be larger or smaller, according to the motion required. A simple leather band, four or five inches wide, and eight, ten, or twelve feet long, is all that is necessary to connect it with any thrasher or other machine to be propelled.

The advantages which this Horse Power possesses over any now in use, with which I am acquainted, are many, and decidedly important.

First. Its durability. The parts being few and simple—without a multiplicity of wheels to increase its motion—and made chiefly of iron, are necessarily durable and free from danger of breaking in the midst of a hurry of work. The ordinary machines often give way, when some six or eight hands are engaged, and must stand idle while repairs are being made, or at great disadvantage be otherwise employed. The losses, thus accruing are often very detrimental to the farmer.

Second. It is very compact, occupying but little space—is very light and therefore easily stowed away, or removed from place to place. The sides which enclose the horse may be lifted off—the flooring removed piece by piece—also the feet on which the frame rests without a hammer or a wrench, and then loaded on a wagon, by one man. To remove the band wheel a hammer only is necessary.

Third. As the motion is obtained direct from the horse's feet, without the intervention of several wheels to increase the motion, a great amount of friction is saved, all of which is so much gain for effective work. Even the endless chain will not give as much direct motion, while it creates more friction—is more complicated and liable to break—more expensive and difficult to repair. Indeed, as I said in the commencement, it is difficult to conceive how any thing in the shape of horse power could be more compact, more portable, more durable and more effective, consuming so little of the horse's strength, in overcoming the friction of machinery necessary to obtain the required motion, which is always so much actual loss of power. It is moreover much cheaper in the first cost as well as in contingent expenses for wear and tear.

Mr. Arnold is now manufacturing Machines in this city, and is ready to dispose of Rights or Machines at short notice. All communications addressed to William E. Arnold, Rochester, (post paid) will receive prompt attention. W. W. R.

CURE FOR THE HOOF-AIL

Mr. Tucker—So much has been said respecting the cause and cure of the hoof-ail among cattle, and so various and positive have been the experience and theories of our farmers on this subject, that it may appear a matter of mere presumption to say any thing more regarding it. But with a desire of adding my quota to the amount of information already obtained, and conferring a benefit to my fellow farmers, I shall proceed to give you my little experience and observation relative to the hoof-ail.

During the early part of last winter, I noticed that one of my cows walked a little lame; but as there were horses running in the yard I attributed the lameness to a kick from one of them; but the lameness increased, and hearing that other cattle in the neighborhood were similarly attacked, and that it was considered a disease, which was denominaied the hoof-ail, I was led to the same conclusion, and watched its progress. During the winter I noticed in your paper that the disease had become quite general throughout this section of the country, and that the attention of our farmers had been drawn to a consideration of the subject. Some attributed the disease to ergot, some to freezing, and some to a plentiful supply of litter in the yard. Owing to the unfavorableness of the past season I had one field of wheat so completely blasted that I did not thresh the straw. There grew with the wheat considerable rye, which was very foul of ergot. This unthreshed straw I fed out to my cattle and horses during the fall and early part of winter; and owing to this circumstance, and the theory advanced by others, I was led to suppose the disease occasioned by ergot. As spring opened, and the period approached for this cow to calve, her lameness seemed to diminish, and at the time of her calving she seemed to be almost entirely free from the disease, but shortly afterwards her lameness rapidly increased and she became more so than she had been at any previous time. At the suggestion of a neighbor I introduced a rowel of poke weed (*Phytolacca decandra*) into her breast and as soon as suppuration commenced her lameness began again to diminish, and in a short time left her completely, and she has not since been troubled with it.

About the middle of last November, I noticed that another of my cows was attacked with all the symptoms ff the hoof-ail; and this too, without any exposure to oreezing, as my cattle had been stalled during all the cold weather we had—and without having eaten of ergot, as my cattle had been in a pasture purely clover. How to account for this attack under such circumstances, I was at a loss. The cow grew gradually more and more lame, and failed completely of her milk, till about four weeks after the first symptoms appeared. I rowelled her, as I had the other cow, with poke weed, and in a fortnight she was completely restored, and has not, as yet, shown any farther symptoms of disease.

I have told you my experience, I offer no advice; but if others shall hereby be led to test the value of my experience, and it should result favorably, it will be conferring a favor upon the community to give it publicity.

Respectfully yours, Edward Wilbur.

Pittsford, Dec. 29th, 1838.

Experiment in Boiling Seed Wheat.

Mr. Tucker—A fact, important to agriculturists, recently came under my notice, which, from subsequent inquiry, I am led to believe is not generally known. I had prepared a quantity of wheat for seed by liming it, which I allowed to remain in that state for upwards of a fortnight, when being apprehensive, from the remarks of others, that its vitality had been destroyed, I had resort to the following means to ascertain how far my own ideas on the subject were correct.

I accordingly took three parcels of wheat—the first in its natural state; the second having been limed two days, and the third as above stated, in prepartion for upwards of a fortnight. Having tied these up in separate bags and boiled them over a quick fire for fifteen minutes, they presented the following appearance: The parcel containing wheat in its natural state had sprouted—that which had been limed for two days was still farther advanced—while the last sample of wheat, supposed to have been eaten up by the lime, presented an appearance of healthy vegetation. I accordingly acted upon the result ascertained by this experiment, and have sown my wheat, which has since made its appearance in a healthy state.

As the fact above stated may be already ascertained and acted upon by more experienced agriculturists, I beg to state, that the writer is a young farmer at all times anxious to avail himself of the experience and suggestions of others. G.

Brantford, U. C. Dec. 29, 1838.

To make Cows Milk Easy.

Mr. Tucker—Tell your readers if any of them have a cow that milks hard, to cut the teats crosswise, and it will make them milk easy. D. Gould.

The power of Science.—The transmutation of the baser metals into gold and silver, is a small affair compared with changing darkness into light, want into plenty, misery into happiness: yet science can do all this.—*Farmer's Cabinet.*

SELF CULTURE.

BY W. E. CHANNING.

We have placed below a column or more of extracts from the Franklin Lecture, recently delivered by the Rev. Dr. Channing, and published by J. Munroe & Co. to which the attention of readers will not need a second direction. What a scandal it is to the taste and discrimination of the people, that immense sums of money are given to foreign quacks and mountebanks for *lectures*, when we have among us such eloquent and patriotic men as William E. Channing, Edward Everett and Jared Sparks, always ready to enlighten, instruct, improve and entertain us, with the rich treasures of their learning and the moral beauty of their intellectual and moral faculties. "Self-Culture," by Dr. Channing, is one of the most fascinating compositions that the public have seen from his pen. It cannot fail to inspire the young with good resolutions, and to make the old regret that the time for the discipline and improvement, so eloquently recommended, has, with them, passed away: [*Boston Cour.*

"I proceed to another important means of Self-culture, and this is the control of the animal appetites.—To raise the moral and intellectual nature, we must put down the animal. Sensuality is the abyss in which very many souls are plunged and lost. Among the most prosperous classes, what a vast amount of intellectual life is drowned in luxurious excesses. It is one great curse of wealth, that it is used to pamper the senses; and among the poorer classes, though luxury is wanting, yet a gross feeding often prevails, under which the spirit is whelmed. It is a sad sight to walk through our streets, and to see how many countenances bear marks of a lethargy and a brutal coarseness, induced by unrestrained indulgence. Whoever would cultivate the soul must restrain the appetites. I am not an advocate for the doctrine, that animal food was not meant for man; but that this is used among us to excess, that as a people we should gain much in cheerfulness, activity and buoyancy of mind, by less gross and stimulating food, I am strongly inclined to believe. Above all, let me urge on those, who would bring out and elevate their higher nature, to abstain from the use of spirituous liquors.—This bad habit is distinguished from all others by the ravages it makes on the reason, the intellect; and this effect is produced to a mournful extent, even when drunkenness is escaped. Not a few men, called temperate, and who have thought themselves such, have learned, on abstaining from the use of ardent spirits, that for years their minds had been clouded, impaired by moderate drinking, without their suspecting the injury. Multitudes in this city are bereft of half their intellectual energy, by a degree of indulgence which passes for innocent. Of all the foes of the working class, this is the deadliest. Nothing has done more to keep down this class, to destroy their self-respect, to rob them of their just influence in the community, to render profitless the means of improvement within their reach, than the use of ardent spirits as a drink. They are called on to withstand this practice, as they regard their honor, and would take their just place in society. They are under solemn obligations to give their sanction to every effort for its suppression. They ought to regard as their worst enemies, (though unintentionally such,) as the enemies of their rights, dignity, and influence, the men who desire to flood city and country with distilled poison. I lately visited a flourishing village, and on expressing to one of the respected inhabitants the pleasure I felt in witnessing so many signs of progress, he replied, that one of the causes of the prosperity I witnessed, was the disuse of ardent spirits by the people. And this reformation, we may be assured, wrought something higher than outward prosperity. In almost every family so improved, we cannot doubt that the capacities of the parent for intellectual and moral improvement were enlarged, and the means of education made more effectual to the child. I call on working men to take hold of the cause of temperance as peculiarly *their* cause. These remarks are the more needed, in consequence of the efforts made far and wide, to annul at the present moment a recent law for the suppression of the sale of ardent spirits in such quantities as favor intemperance. I know that there are intelligent and good men, who believe, that in enacting this law, government transcended its limits, left its true path, and established a precedent for legislative interference with all our pursuits and pleasures. No one here looks more jealously on government than myself. But I maintain, that this is a case which stands by itself, which can be confounded with no other, and on which government from its very nature and end is peculiarly bound to act. Let it never be forgotten, that the great end of government, its highest function, is, not to make roads, grant charters, originate improvements, but to prevent or repress crimes against individual rights and sociaorder. For this end it ordains a penal code, erects prisons, and inflicts fearful punishments. Now if it be true, that a vast proportion of the crimes, which government is instituted to prevent and repress, have their origin in the

use of ardent spirits; if our poor-houses, work-houses, jails and penitentiaries are tenanted in a great degree by those, whose first and chief impulse to crime came from the distillery and dram-shop; if murder and theft, the most fearful outrages on property and life, are most frequently the issues and consummation of intemperance, is not government bound to restrain by legislation the vending of the stimulus to these terrible social wrongs? Is government never to act as a parent, never to remove the causes or occasion of wrong doing? Has it but one instrument for repressing crime, namely, public, infamous punishment, an evil only inferior to crime? Is government a usurper, does it wander beyond its sphere, by imposing restraints on an article which does no imaginable good, which can plead no benefit conferred on body or mind, which unfits the citizen for the discharge of his duty to his country, and which, above all, stirs up men to the perpetration of most of the crimes, from which it is the highest and most solemn office of government to protect society?

* * * * * *

"It is chiefly through books that we enjoy intercourse with superior minds, and these invaluable means of communication are in the reach of all. In the best books, great men talk to us, give us their most precious thoughts, and pour their souls into ours. God be thanked for books. They are the voices of the distant and the dead, and make us heirs of the spiritual life of past ages. Books are the true levellers. They give to all, who will faithfully use them, the society, the spiritual presence of the best and greatest of our race. No matter how poor I am. No matter though the prosperous of my own time will not enter my obscure dwelling. If the sacred writers will enter and take up their abode under my roof, if Milton will cross my threshold to sing to me of Paradise, and Shakespeare to open to me the worlds of imagination and the workings of the human heart, and Franklin to enrich me with his practical wisdom, I shall not pine for want of intellectual companionship, and I may become a cultivated man though excluded from what is called the best society in the place where I live.

"To make this means of culture effectual, a man must select good books, such as have been written by right minded and strong minded men, real thinkers, who, instead of diluting by repetition what others say, have something to say for themselves, and write to give relief to full earnest souls; and these works must not be skimmed over for amusement, but read with fixed attention and a reverential love of truth. In selecting books, we may be aided much by those who have studied more than ourselves. But, after all, it is best to be determined in this particular a good deal by our own tastes. The best books for a man are not always those which the wise recommend, but oftener those which meet the peculiar wants, the natural thirst of his mind, and therefore awaken interest and rivet thought. And here it may be well to observe, not only in regard to books but in other respects, that self-culture must vary with the individual. All means do not equally suit us all. A man must unfold himself freely, and should respect the peculiar gifts or biasses by which nature has distinguished him from others. Self-culture does not demand the sacrifice of individuality. It does not regularly apply an established machinery, for the sake of torturing every man into one rigid shape, called perfection. As the human countenance, with the same features in us all, is diversified without end in the race, and is never the same in any two individuals, so the human soul, with the same grand powers and laws, expands into an infinite variety of forms, and would be wofully stinted by modes of culture requiring all men to learn the same lesson or to bend to the same rules.

"I know how hard it is to some men, especially to those who spend much time in manual labor, to fix attention on books. Let them strive to overcome the difficulty, by choosing subjects of deep interest, or by reading in company with those whom they love. Nothing can supply the place of books. They are cheering and soothing companions in solitude, illness, affliction.—The wealth of both continents would not compensate for the good they impart. Let every man, if possible, gather some good books under his roof, and obtain access for himself and family to some social library. Almost any luxury should be sacrificed to this.

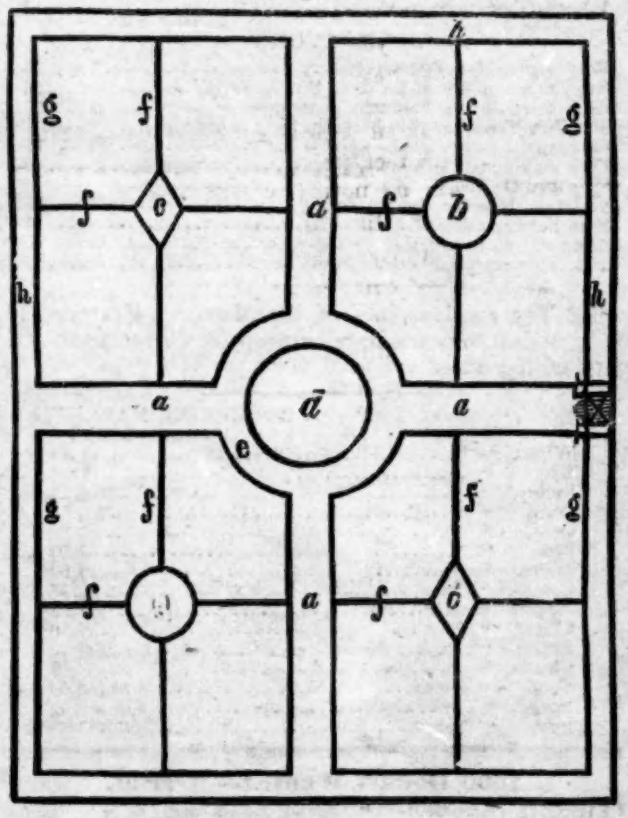
One of the very interesting features of our times, is the multiplication of books, and their distribution through all conditions of society. At a small expense, a man can now possess himself of the most precious treasures of English literature. Books, once confined to a few by their costliness, are now accessible to the multitude; and in this way a change of habits is going on in society, highly favorable to the culture of the people. Instead of depending on casual rumor and loose conversation for most of their knowledge and objects of thought; instead of forming their judgments in crowds, and receiving their chief excitement from the voice of neighbors, men are now learning to study and reflect alone, to follow out subjects continuously, to determine for themselves what shall engage their minds, and to call to their aid the knowledge, original views, and reasonings of men of all countries and ages; and the results must be, a deliberateness and independence of judgment, and a thoroughness and extent of information, unknown in former times. The diffusion of these silent teachers, books, through the whole community, is to work greater effects than artillery, machinery and legislation. Its peaceful agency is to supersede stormy revolutions. The culture, which it is to spread, whilst an unspeakable good to the individual, is also to become the stability of nations.

* * * * * *

"Labor is a school of benevolence as well as justice. A man to support himself must serve others. He must do or produce something for their comfort or gratification. This is one of the beautiful ordinations of Providence, that, to get a living, a man must be useful.—Now this usefulness ought to be an end in his labor as truly as to earn his living. He ought to think of the benefit of those he works for, as well as of his own; and in so doing, in desiring amidst his sweat and toil to serve others as well as himself, he is exercising and growing in benevolence, as truly as if he were distributing bounty with a large hand to the poor. Such a motive hallows and dignifies the commonest pursuit. It is strange, that laboring men do not think more of the vast usefulness of their toils, and take a benevolent pleasure in them on this account. This beautiful city, with its houses, furniture, markets, public walks, and numberless accommodations, has grown up under the hands of artizans and other laborers, and ought they not to take a disinterested joy in their work? One would think, that a carpenter or mason, on passing a house which he had reared, would say to himself, "this work of mine is giving comfort and enjoyment every day and hour to a family, and will continue to be a kindly shelter, a domestic gathering-place, an abode of affection, for a century or more after I sleep in the dust;" and ought not a general satisfaction to spring up at the thought? It is by thus interweaving goodness with common labors, that we give it strength and make it a habit of the soul.

PLAN OF A GARDEN.

(Fig. 7.)



REFERENCES.

a a a a Main walks, 8 feet wide.
b b Octagons or circles, 12 feet in diameter.
c c Diamonds, 12 feet in diameter.
d Circle, 24 feet in diameter.
e 6 feet walk around the circle.
f f f f f f f f Walks, 6 feet wide.
g g g g Walk 6 feet, the circumference of the garden.
h h h h Border, 4 feet wide.

The walks round the octagons and diamonds 5 feet wide.

The above plan for a Garden was furnished for the Cultivator, by a Virginian. We copy his remarks upon it:

"It is the usual practice in the south, among moderate estate farmers to combine the flower and vegetable gardens. The desideratum among them, then, is, to lay off a garden which will accomplish the object in the simplest, neatest style. The one in question was laid off this last spring, and has been much admired. It is 60 by 80 yards—nearly an acre. The area is divided by two main walks, eight feet wide, intersected by a circle twenty-four feet in diameter. This, you will perceive, throws the garden into four divisions; each division is divided into four squares by six feet walks, which are again intersected by circles or octagons and diamonds, each twelve feet in diameter. A walk six feet wide runs the circumference of the garden, leaving a border next the paling of four feet. The centre circle is intended for a summer house of lattice work, to be covered with vines, such as the multiflora, &c.—the smaller figures to be devoted exclusively to flora, and decoral ted and adorned by fixturrs, according to the taste of the individuals who may bestow most attention upon them. There are sixteen squares for vegetables, the borders I shall sow in lucerne or flowers, as is the usual case."

The Smithsonian Bequest.

Washington, Dec. 17th, 1838.

The best method of executing the benevolent design of Smithson, who bequeathed half a million of dollars to the United States to be expended in the diffusion of knowledge, begins to excite a good deal of interest, and has claimed the attention of several intelligent and scientific men in our country.

The communications received by the Secretary of State in answer to interrogatories sent by that officer to a number of scientific men in the United States, have been referred to a select committee, of which Mr. J. Q. Adams is the chairman, and who, I presume, will bestow upon it much of his attention. A friend has communicated to me the outline of a plan recommended by a German, which I mentioned in my last; but whether it will be adopted or not I am not prepared to say. It was presented to-day by Mr. Adams.

This plan contemplates the establishment of an institute in this city to serve as a nursery of scientific agriculturists for the U. S.—to consist of one hundred pupils at a time, to be gradually increased from the profits of the farm; the lectures to be free, and the price of board moderate, as half the number of pupils are to be practically employed daily on the farm. Ins the first or principal compartment of this Institute will be taught, 1st, *Agronomy*, which treats of the different primitive earths, and other elements of which the soil is composed. 2d, *Agriculture*, which teaches the cultivation of the respective soils in such a manner as to produce the most perfect corps. This is subdivided into chemical and mechanical agriculture. 3d, *Vegetable Productions*, teaching the culture of grasses, leguminous field plants, roots, vines, mulberry trees, fruit trees, &c. 4th, *The Animals* used and raised by the agriculturists, &c. 5th, *Economy*, or the manner of arranging and conducting a farm. In the secondary compartment the following branches are to be taught, viz: Veterinary, Technological agriculture, culture of forest trees, agricultural architecture, and civil engineering as connected with agriculture. The auxiliary sciences to be taught, are Chemistry, Natural Philosophy, Mineralogy, and Geology, Botany and Physiology, Zoology and Meteorology; the Mathematical Sciences, drawing of machines, animals, plants and landscapes. For the purpose of illustrating all these sciences, there must be an extensive farm, with a field for experiments, workshops, beet sugar manufactory, mills, &c.—a botanical garden, a collection of the best implements, or models of them; a library; a cabinet of minerals properly arranged according to their chemical character; an apparatus for mathematical and physical instruction; a collection of skeletons of domestic animals for the study of comparative anatomy; a collection of seeds and insects, and a laboratory. The farm which is to serve for the practical illustration of the theory is to consist of 640 acres in cultivation, to be divided into two equal portions, to show the system of rotations. One hundred acres of meadow, to show how natural meadows can be improved by draining, irrigation, manuring, &c. Eighty acres of pasturage, to show the difference between natural and artificial pasture, and the manner of improving it—four acres for a vineyard—four acres for a hop yard—forty acres for experimental fields, to show how to cultivate plants useful in agriculture, to try new ones, and for experiments on manures, rotation of crops, and new agricultural implements—a vegetable garden of six acres—a mulberry plantation of six acres—an orchard and nursery of twenty acres—five hundred acres of woodland, to show the cultivation of forest trees, the mode of preparing charcoal, &c., and a botanical garden of three acres.

The pupils admitted into this establishment are to be taught to forge, to shoe a horse, to make a wheel and wagon, to stock a plough, to build outhouses, &c. The number of pupils at the commencement is not to exceed 100—to be at least 14 years of age at the time of admission—of good moral habits—to possess an ordinary English education, and be capable of comprehending a popular course of lectures. They are to be

divided into three classes. The third or free class is not to exceed 20 in number—must stay two years—perform the work of the farm, and receive their tuition, boarding and lodging free. The second class is not to exceed 60—must also stay two years, to acquire the theory and practice of agriculture, and all the auxiliary sciences. The first class is to consist of 20 pupils, who have been two years in the third class, and who desire to perfect themselves for professors of similar establishments. This class is to have the superintendence of the other pupils. The officers of the institute are a director, who has the entire direction and control of the establishment; a treasurer and two clerks, five professors, and a teacher of the lower branches. The practical manipulations are to be illustrated by a superintendent of the farm, a superintendent of the stable, who teaches riding and breaking horses; a superintendent of the sugar beet manufactory, a machinist, gardener, shepherd, &c.

The total cost and expense of purchasing the lands, erecting the buildings, buying stock, &c. are estimated at $150,000 and $140,000 are to be invested at six per cent. and out of the proceeds the salaries of the professors and officers are to be paid. If this should be adopted, it would be the only institut on of the kind in the United States, and the first attempt ever made by Congress to promote the most valuable and important branch of our national industry and wealth. The other plans consist, I believe, of the old fashioned universities, &c. and systems of free lectures—*N. Y. Herald.*

Difference of opinion in regard to Late Pruning.

Sometime since we published an article from some other Journal recommending late pruning of apple and other fruit trees. Our friend Paine Wingate, who has had much experience in orcharding, strongly objects to this system, as exceedingly injurious in this climate at least. His reasons are that when a tree is pruned late, the bark is started, a little, the sap flows and becomes sour and cankers, or brings on a decay of the wood. Another reason he assigns is this—when the limb heals over, the amount of new wood which forms around the cut is thin and cannot withstand the frosts of our winters. It generally bursts and brings on a destruction of the parts. The best time, according to his experience for pruning, is the first of May, or if you should have much to do, begin in April. At this time the sun has not power to sear or to bring on a fermentation of the sap which may escape.

When a tree has been injured by the winter, it is best to cut all the limbs off near the bottom, or place of starting from the trunk. Some few winters ago, there was a good deal of damage done by the winter, among the orchards of this vicinity, especially among the Baldwins. Mr. Wingate had several that was apparently wholly destroyed. He accordingly pruned the most of them as above directed. These are now flourishing bearing trees, while those not pruned, finally died entirely. We give these facts as we received them, not having had much experience in orcharding, we cannot decide which is best, but as early pruning has hitherto been safe and beneficial, and as it can generally be done at a time, when there is not so great a pressure of business, it would seem to be the best policy to pursue this course, until thorough trials shall prove the other incontestibly better.—*Maine Farmer.*

POTATOES—QUODDY BLUES.

Hezekiah Prince of Thomaston, Me., in a letter to the editor of the Maine Farmer, refers to the communication which has recently had *the run* of the newspapers,—stating the great product of Rohan Potatoes, in a certain case, where 20½ bushels were raised from 279 hills, four feet apart, making about seventeen square rods of land, the produce being less than 200 bushels to an acre, —says—

I have, the season past, raised an equal quantity of Potatoes, of a large size and superior quality, (Quoddy blues,) in less than one half the number of hills, and on one fourth of the quantity of land, without any extra attention; my potatoes were planted three feet apart, three eyes of large potatoes in each hill, manured with new barn manure—and they yielded a bushel to six and a half hills, an average of ten pounds to a hill and more than eight hundred bushels to an acre.

The quality of my potatoes may be equalled but cannot be excelled.—*Yan. Far.*

BEET SUGAR.—Preparations are making to manufacture beet sugar in Northampton, the coming season. In Northampton, about twelve acres are under cultivation, which will average fifteen to twenty tons to the acre, but when better understood a larger crop may be expected. In French Flanders an average crop is fifteen tons to the acre, but 30 tons are often produced; and in that country, it is said, that even among the poorer classes, no other than refined sugar is used. In Prussia the average crop is sixteen tons to the acre, but in England it is thirty tons, and a first rate crop fifty tons to the acre.

The Monthly Genesee Farmer.

PUBLISHED BY LUTHER TUCKER.

TERMS—The MONTHLY FARMER is made up of selections from the GENESEE FARMER, (a weekly publication at $2,00 per year,) and published on the first of each month, at the low price of FIFTY CENTS a year, *payable always in advance*—Eleven copies for Five Dollars—the money to be sent free of postage.

☞ The Postage on this paper will be only 1 cent to any part of this state, and 1½ cents to any part of the United States.

☞ All subscriptions must commence with the first number of the volume.

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☞ The previous vols. of the MONTHLY FARMER can be furnished to new subscribers—price 50 cents per vol. stitched in printed covers.

ROCHESTER MARKET, *January* 5, 1839.

Wheat, per bu.		1,50
Rye,	" "	1,00
Barley,	" "	66@75
Corn,	" "	75@81
Oats,	" "	38
Peas,	" "	1,00
Beans,	" "	1,00
Potatoes,	" "	38
Apples,	" bbl.	1,25
Cider,	" "	1,50
Butter,	" lb.	16@20
Cheese,	" "	7@9
Beef,	" cwt.	4,50@5,50
Pork,	" "	7,00@8,00
Hay,	" ton,	7,00@11,00

1000 Dollars Wanted.—A Hint.

THERE is more than one thousand dollars owing us from distant customers, mostly in small accounts, which have been standing from four months to four years. And lest some of our dilatory friends should think that we have forgotten them, or that their account is too small to be regarded, we would inform them that *we* have debts to pay too, and in order to extend our business and do justice to others, we must insist on more punctuality on the part of some of our customers. "Do you take?"

REYNOLDS & BATEHAM.

Rochester Seed Store, Jan. 1st, 1839 jan 5-2t

Morus Multicaulis.

FOR SALE.—A few hundred very fine *genuine* Morus multicaulis Trees *not trimmed.*

ALSO—1000 cuttings of do.

H. J. ROGERS, 17 Arcade.

Rochester, Jan. 7, 1839.—jan 5-tf

WM. PRINCE & SONS will make sales of trees and cuttings of the genuine Chinese Morus multicaulis, Morus Expansa, Alpine, Broussa, Canton, and other varieties, deliverable to the purchaser at such period in the spring as is convenient to them, and will enter into contracts accordingly. Prices and terms for the trees and cuttings will be forwarded to all who may apply for them by mail, as well as prices of Silk Worm Eggs, Mulberry seed, &c. The Multicaulis Trees are remarkably vigorous, and as we first imported the genuine tree, purchasers are sure of obtaining the true kind. It is from this cause and from the great attention paid by them, that the trees they have sold have given universal satisfaction.

Flushing, near New York, Dec. 26, 1838. jan 5-8t

For Sale.

A SMALL FARM, finely situated, and of uncommon productiveness, near a large village on the Erie Canal, and admirably adapted to the dairy business and marketing. For further particulars, and terms, inquire at this office. Dec. 29—tl

Fruit Trees for Sale.

THE subscriber respectfully informs his friends and the public that he has for sale at his Nursery in Rochester, Monroe county state of New York, a large quantity of Fruit Trees, grafted and inoculated with the most approved kinds, now fit for transplanting. which he will sell on the most reasonable terms.

April 15, 1838. SAMUEL MOULSON.

N. B. Cash will be paid for a few thousand two years old APPLE TREES.

The Magazine of Horticulture,

BOTANY and all useful discoveries and improvements in rural affairs, a monthly publication, by Hovey & Co. Boston, price three dollars a year.

This is the most popular, scientific and practical work of the kind in the United States. It contains numerous original communications from eminent American Horticulturists, and valuable selections from the European Magazines, notices and descriptions of new and beautiful plants, flowers, fruits and vegetables, with observations on their history, use, propagation and culture, directions, with plans and engravings, for constructing and managing greenhouses, hothouses, frames, &c. with particular instructions for the propagation and culture of green house plants, and the management of plants in rooms. An account of the proceedings of the Massachusetts and other Horticultural Societies, and descriptions of the principal gardens, nurseries, greenhouses, &c. in the United States.

This work should be read and patronised by every lover of Horticulture and friend of improvement. The fifth volume will commence with the ensuing year. Specimens may be examined at the Rochester Seed Store, where subscriptions are received by

Dec. 8.—3t REYNOLDS & BATEHAM.

Wheat Farms for sale in Western New-York,

IN the counties of Monroe, Orleans, Genesee and Erie—varying in quantity from 50 to 300 acres each—under a good state of cultivation and improvement, with suitable buildings, fences, &c. watered with durable streams, and most of them have wheat on the ground. Five to eight years credit can be given, if wanted, on the whole principal sum, with annual interest. These farms are situated in the midst of a rich agricultural district, unsurpassed in the richness and productiveness of its soil; lying on the banks of the Erie canal, and in the vicinity of Rochester, Lockport and Buffalo, affording at all times a ready and sure market for all the articles of produce, which at present prices amply reward the husbandman and enables him with a few crops to pay the first cost of his lands. A favorable opportunity is here presented to the enterprising farmer who would wish to obtain a good farm on liberal credit, with sufficient means to secure the payment of one-third of the purchase money. Letters (post paid) promptly attended to.

Rochester, N. Y., Dec. 8, 1838.-4w JOHN C. NASH.

Genuine Morus Multicaulis.

THE subscriber has still for sale, one thousand genuine Morus multicaulis, of thrifty growth and untrimmed. They are choice trees, selected for their size, and will afford a large quantity of cuttings. ASA ROWE.

Greece, October 27th, 1838.

Seeds for 1839.

WE are daily receiving our fall supply of SEEDS for the coming season and advices have just been received from London, of the shipment of a large invoice of English seeds of the present year's growth. They will shortly be received, and we shall then be prepared to supply dealers and others by wholesale and retail, with such articles, and at prices as cannot fail of giving the fullest satisfaction

Orders from abroad where the articles are to beforwarded by navigation, should be sent as soon as possible. Those of our friends who have already favored us with their orders may rest assured that their wishes will receive due attention. REYNOLD & BATEHAM.

Rochester Seed Store, October 27th, 1838.

Monroe Horticultural Garden and Nursery,

GREECE, MONROE COUNTY, N. Y.

THIS establishment now comprises over 20 acres, covered compactly with trees and plants in different stages of their growth.

The subscriber offers to the public a choice selection of Fruit Trees, of French, German, English and American varieties, consisting of Apples, Pears, Plums, Peaches, Cherries, Apricots, Nectarines, Quinces, Currants, Gooseberries, Raspberries, Grape Vines, Strawberries, Ornamental Trees, Shrubs, Plants, Hardy Roses, Vines, Creepers, Herbaceous Perennial Plants, Bulbous Roots, Splendid Pæonies, Double Dahlias, &c. &c.

Also, a large collection of Green House Plants, of choice and select varieties, in good condition.

Orders respectfully solicited. Trees and Plants, when ordered, are carefully selected and faithfully packed, and if desired, delivered on the Canal, one mile from the Nursery, or at Rochester.

Orders for Mr. Rowe's Nursery received by the publisher of this paper.

Catalogues will be sent to every applicant, gratis, or may be had by calling at the office of the Genesee Farmer

April 1, 1838. ASA ROWE.

Chinese Morus Multicaulis, &c.,

At the Linnæan Gardens, Flushing, New York.

50,000 SPLENDID trees of the genuine Morus multicaulis are yet remaining for sale at moderate prices, according to their size, and also cuttings of the same. None of the *humbug* kind are sold at this establishment. Also 20,000 trees of the Morus Expansa, which has very large leaves, greatly loved by the worms; it is very hardy, and yields silk of the first excellence. A great supply of the Moretti, or Alpine Mulberry, the Canton, Dandola, Broussa, Asiatic, Pyramidalis, Rose of Lombardy, Morus Alata, and other varieties. Also, Fruit and Ornamental Trees, Plants and Seeds of every kind, and an immense stock of Bulbous Flower Roots, just arrived from Holland.

Silk Worms' Eggs of every kind at the lowest prices, and White Italian, Canton and Moretti, or Alpine Mulberry Seeds in any quantity.

The Morus Multicaulis trees raised here have one-third more joints and buds than southern trees, and of course are worth 50 per cent. more for propagation; and the wood becomes as mature and perfect on the high exposed position our nurseries occupy, as at any place in the Union. Also, Fruit and Ornamental Trees, Bulbous Roots, Green House Plants, and Seeds of all kinds, for sale in large or small parcels.

Priced catalogues will be sent to every applicant, and orders per mail will be executed with as much precision and despatch as if the purchasers were present, and will be packed so as to be sent to the remotest region with safety.

nov 17-8t] WM. PRINCE & SON.